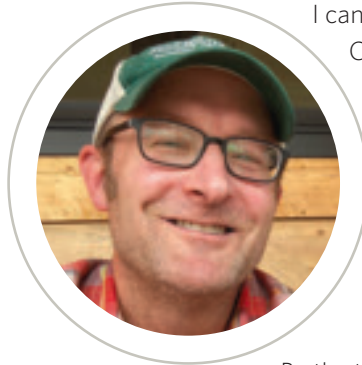


KENTUCKY FIELD NOTES

FALL/WINTER 2023

Land Matters



I cannot remember how old I was when I first learned of The Nature Conservancy, but I know it was something close to love at first sight. More specifically, I was an immediate and full convert to the Conservancy's simple but compelling strategy: identify ecologically important land and buy it for conservation. The Nature Conservancy was Mother Nature's real estate agent, and as a kid who loved the outdoors and spent a lot of time looking for empty spots on maps, I was immediately taken with the approach.

By the time I started my career at the Conservancy, I understood that land protection alone was not a viable path to mission success and that the depth and breadth of our work had matured significantly since my magazine-inspired indoctrination in the late 1980s. Nonetheless, I started as a Land Protection Specialist, and conservation real estate remained my focus and passion. That was 21 years ago, and my career and the Conservancy's work have continued a relatively dramatic evolution. Globally, TNC is working on sustainable fisheries, climate policy, environmental markets, and soil health, to name just a few of the diverse issues we are tackling to create a world where nature and people thrive. But through all our growth and change as an organization, land protection has remained a principal component of our work, and it remains pivotal to our efforts to conserve biodiversity and address and adapt to climate change. And I, for one, still love a good land deal.

On page 3, you will read about our acquisition of the Fern Lake property outside of Middlesboro in Bell County in far southeastern Kentucky. This project has all the elements of a classic Conservancy land acquisition—ecologically important habitat, proximity to other protected land, and a long and complicated history (the property has been on the conservation community's radar for over 20 years and there have been several prior unsuccessful attempts to acquire). The property is located right in the heart of what we call the “resilient and connected network,” places sophisticated science tells us will be more resilient to climate change and will provide migratory corridors for species on the move. Thus, Fern Lake is valuable not simply for what it contains but also as a key link in a growing corridor of protected land running through the entire Appalachian range.

Stay tuned for more land protection news over the coming months. Your donations make this work possible, and, as always, I am so grateful for your generous and ongoing support.

See you outside,

David Phemister
Kentucky State Director

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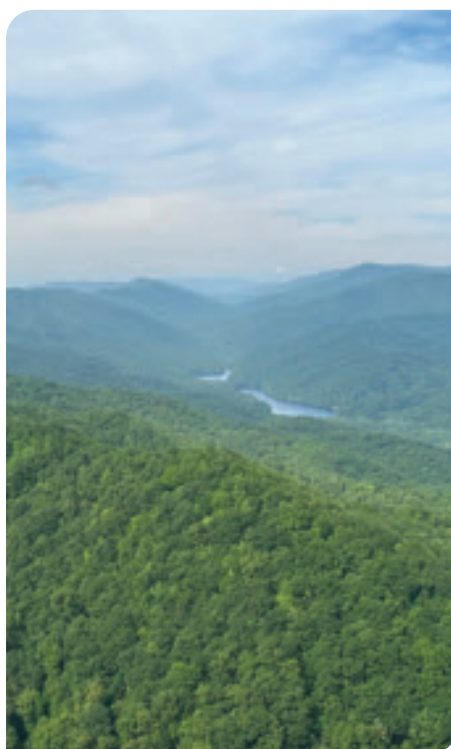
ACQUISITION OF ICONIC PROPERTY AT CUMBERLAND GAP

From the iconic Pinnacle Overlook at Cumberland Gap National Historical Park, the view is breathtaking. The Park's land and The Nature Conservancy's massive Cumberland Forest property stretch back as far as the eye can see, and at the center of it all is the beautiful, tranquil Fern Lake.

TNC and its partners at The Conservation Fund acquired the 712-acre property for its ecological importance and its setting within a resilient and connected forested landscape. The property links thousands of already-protected acres within the globally significant Appalachian Mountains, the continent's most important climate migration corridor. Additionally, Fern Lake serves as the public water supply for the city of Middlesboro. Fern Lake remains closed to the public for now, but public access will be allowed once management plans and appropriate trails and other infrastructure are in place.

"It's sitting right in one of TNC's top priority landscapes," says Dian Osbourne, director of protection for TNC in Kentucky. "This acquisition adds to a landscape of protected property, helps connect a critical migratory corridor for wildlife, and contributes to our 2030 goals for both land and communities. This property has been on the conservation and local communities' radar for years. Its protection is a huge win."

The Conservation Fund, a national nonprofit with a dual mission of land conservation and economic development, works with public agency partners to find solutions for their land conservation objectives. The Conservation Fund frequently works



with TNC in Tennessee to co-acquire land, including at iconic places like the Cherokee National Forest and the Upper Cumberland Plateau, but this is the first time the nonprofit has partnered with TNC in Kentucky. Since Fern Lake straddles both states, both TNC programs and The Conservation Fund worked together.

"One of the benefits of working with TNC on the project is that we can utilize TNC's knowledge of important habitat, flora, and fauna in the area, as well as working with each other's government relations teams," says Ralph Knoll, senior project coordinator for The Conservation Fund. "We're successful because we're all here to accomplish the same objectives. Our partnership is also important because, as the price of land has increased, it's harder for one group to make these acquisitions."

TNC's 2030 goals focus on addressing the dual crises of climate change and biodiversity loss. Protecting land in strategic locations can help mitigate both challenges. Gabby Lynch, director of protection for TNC's Tennessee program, says the acquisition of Fern Lake represents a local win that boosts Appalachian and global objectives for TNC.

"The Pine Mountain corridor and northern Cumberland Plateau host many rare, threatened, and endangered species," Lynch says. "Protecting a property like Fern Lake provides critical habitat for those species. Our data show that the property is incredibly important for Indiana bats, and its protection enhances climate change resiliency for many wildlife species."

Green Heart UPDATE

THE LATEST FROM AN ONGOING PROJECT

In our Fall 2022 issue of Field Notes, we shared some challenges with the Green Heart project in Louisville, a first-of-its-kind study into the human health benefits of increased urban greening. We lost a lot of newly planted trees during a hot, dry summer, but the project responded by replanting roughly 500 trees late in 2022. With nearly 7,700 trees planted and growing, the project has doubled the number of trees in the Green Heart target neighborhoods.

Our partners often refer to Green Heart as a drug trial that uses trees as the pharmaceutical. David Phemister, The Nature Conservancy's Kentucky state director, says the fact that this pharmaceutical grows naturally is an exciting part of the project.

"With traditional pharmaceuticals, if you don't take them, the dosage and effects wear off. In this case, as the trees continue to grow, the dosage will continue to increase," Phemister says. "And unlike medicines, you can never have too many trees. It's a strong foundation that's only going to grow—literally—over time."

The project's scientific studies are already yielding new knowledge. The partners have published twenty-three scientific papers on the project, with more to come as results continue to be analyzed. Published papers range from the core Green Heart study areas of health, air quality, and greening, to auxiliary studies on noise, sleep, and

greening aesthetics. These studies were led by many researchers, but TNC is especially grateful to the project's principal investigator, Aruni Bhatnagar, and to Dr. Ted Smith, both at the University of Louisville's Christina Lee Brown Envirome Institute.

"Ultimately, leveraging the science is what it's all about," says Phemister. "TNC is a science-based organization, but the aim isn't just to increase knowledge but to use the new knowledge to make better decisions and better investments. When the studies really start to produce results, we want them to drive change not just in Louisville but in cities across the country and around the world."

TNC and its partners patiently await the most significant result: Does the data support the project's hypothesis that increased greening will improve cardiovascular health? Dr. Bhatnagar and his team are hard at work analyzing data, and preliminary results should be available in the coming months.

With tree plantings now complete, a new phase of the Green Heart project has begun. Focused on academic analysis, potential project expansion and refinement, and ongoing maintenance of the plantings, this phase shifts full project oversight to the Envirome Institute. The Institute recently hired a new arborist to ensure tree health moving forward.

"I have a lot of gratitude for our partners, especially the Envirome Institute, and the local community," Phemister says. "They've been with this project during both exciting times and more challenging times last summer. My hope is that now and into the future, local residents see Green Heart as an investment in the community whose value will increase over time."



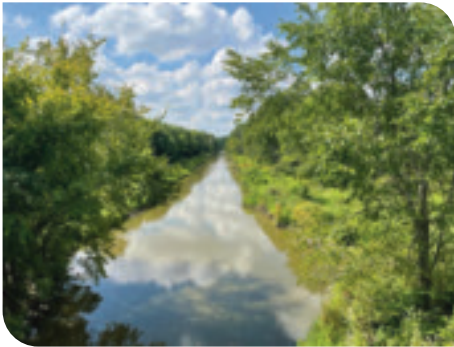
LEARN MORE!

Go to greenheartlouisville.com/learn for more information and a map of the project area. Click on [Research Library](#) to read scholarly articles published by the project team.



Mill Creek GREENWAY

PLAN CREATED FOR NEW LOUISVILLE PARK



Louisville Parks and Recreation recently completed a concept plan for a new park in south Louisville adjacent to what will be one of the country's largest urban stream restoration projects. The Nature Conservancy was a catalyst for the Mill Creek Greenway, a massive restoration project in south Louisville that brings together Louisville Parks and Recreation, the Kentucky Department of Fish and Wildlife Resources (Kentucky Fish and Wildlife), Louisville MSD, and many more partner organizations.

"This project demonstrates the power of asking questions," says David Phemister. "That is really where this project started. Our former lead for this work, Catherine Fitzgerald, asked, 'What's going on in this community and how can restoration of the watershed serve the residents?' Just by asking, by being curious and hearing the perspectives of a lot of folks, including folks in the community, she identified opportunities for a huge stream restoration project and a new park for south Louisville. That's real

leverage and a huge win for the environment and the community."

When complete, the nearly 1,000-acre project will have many new amenities for the Louisville community to enjoy, including more than 10 miles of paved, accessible trails, up to eight miles of soft surface walking trails, nearly 14 miles of restored stream, and more than 600 acres of forestland.

"This is just a massive project. I still have a hard time wrapping my head around it," says Jessica Kane, natural areas administrator for Louisville Parks and Recreation. "The Mill Creek project is one of a kind with cross-sector collaboration and has the potential to be an example of what can be accomplished when vision and planning are shared across multiple governing entities and the community. I think the south Louisville community is really excited to see all of the possibilities of this project."

Creation of the concept plan involved gathering input from more than 150 community members through in-person events and an online survey, which helped the plan's developers identify the community's priorities for the proposed park. Hiking, fishing, wildlife viewing, running and walking trails, and dog-friendly areas topped the list of what community members wanted to see in the Greenway. The plan also brought together numerous conservation and city planning groups.

"Working with TNC and Louisville Parks and Recreation has been really enjoyable," says Rob Lewis, an engineer and program coordinator with Kentucky Fish and Wildlife. "Everyone is committed to the overall ecological benefit of this project."

Lewis says conducting stream restoration in an urban setting is challenging. The Kentucky Fish and Wildlife stream mitigation team works almost exclusively in remote areas, and this project represents new territory. "There is such an organizational lift for a project such as this," Lewis says. "Getting over the hurdles of getting everyone on board at the beginning was a challenge. My big hope is that the public will see this project as a positive attribute to the community and will reach out to learn more about the restoration."

Creation of the Greenway will be a multi-year process requiring multiple funding sources. TNC got the entire effort moving, managed preliminary feasibility efforts, and helped fund the concept plan, while Kentucky Fish and Wildlife will fund the stream restoration through its stream mitigation program. Other potential funding opportunities for the Greenway include the Land and Water Conservation Fund, Great American Outdoors Act, and other state and federal grants.

Emmy Win for CLIMATE VIDEOS

AUTHENTIC VOICES RESONATE WITH VIEWERS

Two videos produced by Wilkinson Visual for The Nature Conservancy in Kentucky recently won a regional Emmy award. The videos focus on Kentucky farmers and small business owners feeling the impacts of a changing climate.

“I think the biggest challenge with the climate conversation is that it has become inherently politicized. One of the things we have learned is that messengers matter and how a message is conveyed matters,” says David Phemister, state director for TNC in Kentucky. “We wanted to start a climate conversation the right way, and we believed people would trust and respect messages from farmers and small business owners.”

TNC’s external affairs director, Heather Jeffs, says climate change used to be seen as a future problem. This perspective made it difficult to convince people of the urgent need to address it.

“We’re increasingly seeing the impacts here and now, how it’s affecting our economies, families, land, and air,” Jeffs says. “That makes it a little easier to begin a conversation, but we need to do that in the right way. Meeting people where they are and being willing to listen and learn is the best approach.”

Videography is particularly adept at bringing viewers close to a given subject. Immersed in sights and sounds, viewers feel closer to speakers than they do with other formats.

“Videos have the advantage of allowing multiple things to happen at once—you hear voices and see images that ground you in place and pull you in,” Phemister says. “We know that if something plays on a screen, it captures attention in a way that a letter to the editor may not. It resonates on an emotional level.”

Filmmaker Mike Wilkinson and producer Eleanor Shelton each received an

Emmy for the video series. Wilkinson says he always feels a sense of pride when creating videos for TNC.

“The fact that we were able to share impactful stories from real farmers, real Kentuckians, I think brought this video to a higher level,” he says. “The candor these folks displayed made for an intriguing yet somber story arc that was completely authentic and perhaps a bit surprising to hear at times.”

For Shelton, the most important aspect of the videos was that the entire videography crew shared a passion for TNC’s mission, which came through in the final work.

“We were lucky to interview amazing farmers and small business owners, all with different views and focuses, who were willing to be honest with us,” says Shelton. “Any business that depends on the land is inextricably tied to the climate. When we saw the final videos, we knew we had something special.”



*Farmers in
a Changing
Climate:*



*Doing Business
in a Changing
Climate:*



Ambitious Wetland MONITORING STUDY

YIELDS IMPORTANT RESULTS FOR CONSERVATION SUCCESS

The Mississippi River Basin is a critical landscape for nature and people. That's why The Nature Conservancy and its partners have worked for years to restore floodplains and improve water quality across the Basin. Wetland restoration programs convert frequently flooded cropland back to healthy bottomland hardwood forest, with benefits for rivers, wildlife, and communities. We did not have a good understanding of the exact nature of those benefits or which restoration projects produced the best results until a six-year monitoring project began in 2018.

"A monitoring project really has never been done at this scale," says Kathy Terry, a natural resource specialist for the Natural Resources Conservation Service (NRCS). "We assumed that taking land out of agricultural production and putting it back into wetlands was going to be good for wildlife, the environment, water quality, and soils, but we didn't have great data to quantify those benefits or identify areas for improvement."

The project brought together NRCS, TNC, and dozens of researchers from four regional universities. The researchers studied wetland restoration sites in the Mississippi River Basin in western Kentucky and western Tennessee.

"We've learned a great deal from this monitoring project," says Shelly Morris, director of freshwater conservation for TNC's Kentucky and Tennessee programs. "In short, we've learned that

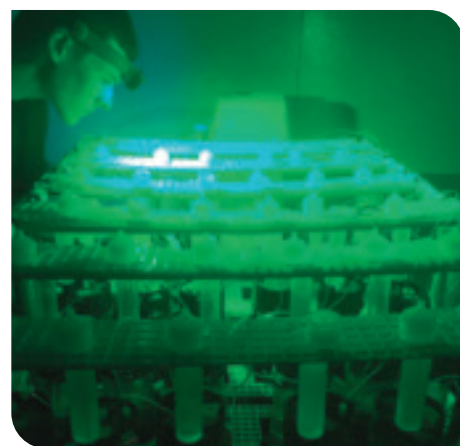
when these lands are restored, they do great things. They sequester nutrients and clean our water better than places that are not restored. The amount of native wildlife that are using these areas is phenomenal."

Some researchers focused on learning how well wetlands can store nutrients such as nitrogen and phosphorus. If wetlands can capture these nutrients and filter them out of the water before they enter the Mississippi River, that means better water quality both here and downstream.

Professor Justin Murdock of Tennessee Tech University and his graduate research students pulled thousands of soil samples from wetland restoration sites, then brought them back to a lab to study how the soils filtered water under flood conditions.

"We were asking questions about tree plantings, creation of shallow water areas, and just letting natural vegetation come back—how do these different strategies affect nutrient retention?" Murdock says. "That gave us information about how we can design better restoration practices in the future."

Other researchers focused on the wildlife benefits of restored wetlands. Professor Michael Flinn of Murray State University conducted studies on wetlands' entire biotic community, from insects to amphibians to birds. The researchers made some surprising discoveries.



"When we first envisioned how this project would look on the ground, we thought many of these sites would be similar to one another," Flinn says. "Every single wetland was unique. They all behaved very differently, even under similar hydrologic circumstances. Also, wetlands recover so quickly. It doesn't take long in a restored wetland for lots of the community to come back—some of the invertebrates, the vegetation, and especially the fish."

Now that the study is complete, the partners can leverage the results for more and better restoration work in the future. "This is already impacting studies outside Kentucky and Tennessee," says Morris. "What we're really trying to accomplish here is a broader body of scientific knowledge and on-the-ground implementation across the entire Mississippi River Basin. I think this project has already made huge contributions to our knowledge and will soon be driving changes in how we approach restoration. Huge project, huge win."

Kentucky Field Notes

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